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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,158	07/30/2001	Robert A. DiChiara JR.	7784-000146	2919
27572	7590	11/05/2003	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			FIORILLA, CHRISTOPHER A	
			ART UNIT	PAPER NUMBER
			1731	

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/918,158	Applicant(s) DICHIARA, ROBERT A.	
	Examiner Christopher A. Fiorilla	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 8-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

1. Applicant's election with traverse of Group I, claims 1-7 in the paper dated 7/30/03 is acknowledged. The traversal is on the ground(s) that the claims are reasonably similar in scope and directed to similar material and it would not be an undue burden for the examiner to search both of the groupings to provide a single examination for all claims. This is not found persuasive because although the search of each group of invention may overlap, each group would involve unique search areas and considerations causing undue burden.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 8-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the paper dated 7/30/03.

3. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: The specification appears to teach a mixture used to prepare a ceramic matrix composite. The term "matrix" appears to be used inappropriately throughout the specification. It is submitted that the "matrix" is part of the final ceramic composite (e.g. the portion of the composite which surrounds the fibers in the examples in the specification"). The mixture of sol-gel and alumina is a fluid material and is not the same as that matrix, thus the term "matrix" used to describe this mixture appears to be inappropriate.

4. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 1, the word "mixture" should replace the phrase " ceramic matrix". See e.g. specification paragraph [0012]. The phrase "ceramic matrix" used throughout the specification refers to part of the composite produced by impregnating a perform and curing/firing.

The word "mixture" should be inserted into the preamble of each of claims 2-7 in place of the phrase "ceramic matrix" for the reasons as set forth above.

In claim 3, the phrase "the silica" has no antecedent basis.

In claim 4, the phrase "the silica" has no antecedent basis.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1,2,5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galligan et al. (5,422,331) in view of Deshpande et al. (6,110,439).

Galligan et al. discloses an oxide based ceramic mixture comprising: a sol-gel matrix ; and alumina particles. Galligan et al. also discloses that the mixture may contain 5-50 weight percent alumina particles; 50-95 weight percent silica sol. See e.g. col. 6, lines 40-66.

Galligan et al. does not disclose the sol-gel comprises 10-25 weight percent metal oxide solids.

Deshpande discloses a silica sol with 12% solids. See Example 4. It would have been obvious to one skilled in the art at the time of the invention to use a sol with a solids loading such as this in the process of Galligan et al. in view of the generic disclosure therein.

7. Claimss 1,2,3,4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rorabaugh et al. (5,958,583) in view of Meyer et al. (4,542,113).

Rorabaugh et al. discloses an oxide based ceramic mixture comprising: an alumina sol matrix; and alumina particles. Rorabaugh et al. also discloses that the mixture may contain up to 30 weight percent alumina particles. See e.g. col. 2, under the heading "DETAILED DESCRIPTION".

Rorabaugh et al. does not disclose the sol-gel comprises 10-25 weight percent metal oxide solids.

Meyer et al. discloses an alumina sol with 20% solids by weight (sol. 2, lines 33-34). It would have been obvious to one skilled in the art at the time of the invention to use a sol with a solids loading such as this in the process of Rorabaugh et al. in view of the generic disclosure therein.

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8. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butler et al. (6,497,776) in view of Meyer et al. (4,542,113) or Deshpande et al. (6,110,439).

Butler et al. discloses an oxide based ceramic mixture comprising: a ceramic sol matrix; and filler particles such as mullite and alumina particles. Example 2 discloses the use of multiple filler materials (see e.g. col. 2, last paragraph). Butler et al. also discloses that the filler particles may be greater than 1 micron in diameter (col. 2, line 61).

Butler et al. does not disclose the specific ratios of ingredients.

Determination of the specific ingredient amounts would have been well within the realm of routine experimentation to one having ordinary skill in the art at the time of the invention. These parameters would have obviously been selected to optimize the process conditions and/or the properties of the final product.

Meyer et al. discloses an alumina sol with 20% solids by weight (sol. 2, lines 33-34). It would have been obvious to one skilled in the art at the time of the invention to use a sol with a solids loading such as this in the process of Butler et al. in view of the generic disclosure therein.

Deshpande discloses a silica sol with 12% solids. See Example 4. It would have been obvious to one skilled in the art at the time of the invention to use a sol with a solids loading such as this in the process of Butler et al. in view of the generic disclosure therein.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher A. Fiorilla whose telephone number is 703-308-0674. The examiner can normally be reached on M-F, 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on 703-308-1164. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

A handwritten signature in black ink, appearing to read 'CA Fiorilla', with a stylized flourish at the end.

Christopher A. Fiorilla
Primary Examiner
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